

IN THE CLAIMS

Please amend the claims as follows:

1 (Currently Amended). A two-dimensional photonic crystal formed by a periodical two-dimensional arrangement of plural unit lattices, comprising:

a prism-shaped first dielectric area arranged at each lattice point of ~~[[the]]~~ each unit lattice;

a prism-shaped second dielectric area arranged at an approximate center of ~~[[the]]~~ each unit lattice; and

a third dielectric area adjacent to and around the first and second dielectric areas.

2 (Currently Amended). A two-dimensional photonic crystal according to claim 1, ~~characterized in that~~ wherein the third dielectric area has a relative dielectric constant different from relative dielectric constants of the first and second dielectric areas.

3 (Currently Amended). A two-dimensional photonic crystal according to claim 2, ~~characterized in that~~ wherein the unit lattice is a tetragonal lattice.

4 (Currently Amended). ~~A two-dimensional photonic crystal according to claim 3, characterized in that~~

A two-dimensional photonic crystal formed by a periodical two-dimensional arrangement of plural unit lattices, comprising:

a prism-shaped first dielectric area arranged at each lattice point of each unit lattice;

a prism-shaped second dielectric area arranged at an approximate center of each unit lattice; and

a third dielectric area adjacent to and around the first and second dielectric areas, wherein

the third dielectric area has a relative dielectric constant different from relative dielectric constants of the first and second dielectric areas,

the unit lattice is a tetragonal lattice, and

the first dielectric area and the second dielectric area have a substantially cylindrical shape and satisfy a relationship:

$$0.4a \leq r_1 + r_2 \leq 0.6a,$$

wherein r_1 indicates a radius of the cylindrical first dielectric area, r_2 indicates a radius of the cylindrical second dielectric area, and a indicates a unit length of a lattice axis of the tetragonal lattice.

5 (Currently Amended). A two-dimensional photonic crystal according to claim 3, ~~characterized in that~~ wherein a relative dielectric constant ϵ_1 of the first dielectric area is equal to a relative dielectric constant ϵ_2 of the second dielectric area.

6 (Currently Amended). A two-dimensional photonic crystal according to claim 3, ~~characterized in that~~ wherein a relative dielectric constant ϵ_1 of the first dielectric area is smaller than a relative dielectric constant ϵ_2 of the second dielectric area.

7 (Currently Amended). A two-dimensional photonic crystal according to any one of claims 2 and 4-6, ~~to, characterized in that~~ wherein a relative dielectric constant ϵ_3 of the third dielectric area satisfies at least a relation $\epsilon_3 > \epsilon_1$.

8 (Currently Amended). A two-dimensional photonic crystal according to claim 2, ~~characterized in that~~ wherein a relative dielectric constant ϵ_1 of the first dielectric area, a relative dielectric constant ϵ_2 of the second dielectric area, and a relative dielectric constant ϵ_3 of the third dielectric area satisfy relations:

$$\epsilon_3 > \epsilon_1, \text{ and } \epsilon_2/\epsilon_1 > 20.$$

9 (Currently Amended). A two-dimensional photonic crystal according to any one of claims 2 and 4, ~~1 to 4~~, ~~characterized in that~~ wherein the first and second dielectric areas are formed by air and the third dielectric area is formed by a dielectric material containing a ceramic material.

10 (Currently Amended). A two-dimensional photonic crystal according to any one of claims 2 and 4-6, ~~1 to 6~~, ~~characterized in that~~ wherein the first and second dielectric areas are formed by a dielectric material containing a ceramic material and the third dielectric area is formed by air.

11 (Currently Amended). A two-dimensional photonic crystal according to any one of ~~claims 1 to 8, characterized in that~~ claims 2, 4-6, and 8, wherein the first, second and third dielectric areas are formed by a dielectric material containing a ceramic material.

12 (Currently Amended). A two-dimensional photonic crystal according to any one of ~~claims 1 to 11, characterized in that~~ claims 2, 4-6, and 8, wherein a unit length a of the lattice axis of the tetragonal lattice is different depending on a frequency of a light or an electromagnetic wave entering the two-dimensional photonic crystal.

13 (Currently Amended). A photonic crystal waveguide ~~characterized in~~ including a two-dimensional photonic crystal according to any one of claims 1 to 12, claims 2, 4-6, and 8, wherein a linear defect is formed in a periodical lattice arrangement of the two-dimensional photonic crystal.

14 (Currently Amended). A photonic crystal resonator ~~characterized in~~ including a two-dimensional photonic crystal according to any one of claims 1 to 12, 2, 4-6, and 8, wherein a point-shaped defect is formed in a periodical lattice arrangement of the two-dimensional photonic crystal.